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| APPLICATION NO.   | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.            | CONFIRMATION NO. |
|---|-------------|----------------------|--------------------------------|------------------|
| 10/802,052  | 03/17/2004  | Kunio Watanabe       | 403006/TAKADA                  | 1711             |
| 23548   | 7590        | 11/15/2006           |                                |                  |
| LEYDIG VOIT & MAYER, LTD<br>700 THIRTEENTH ST. NW<br>SUITE 300<br>WASHINGTON, DC 20005-3960 |             |                      | EXAMINER<br>ROSASCO, STEPHEN D |                  |
|   |             |                      | ART UNIT<br>1756               | PAPER NUMBER     |

DATE MAILED: 11/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

10/802,052

Applicant(s)

WATANABE, KUNIO

Examiner

Stephen Rosasco

Art Unit

1756

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 18 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 7-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-6 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 17 March 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
  - 2) ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SB/08)  
Paper No(s)/Mail Date 3/17/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: \_\_\_\_\_.

#### Detailed Action

Applicant's election without traverse of Group I (claims 1-6) in the reply filed on 10/18/06 is acknowledged.

The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title was amended to read just "Photomask". It is recommended that the title be changed to something like – Photomask for use in a Flare Measuring Method.

The disclosure is objected to because of the following informalities: there are numerous spelling and grammatical errors present in the specification, e.g., page 1, lines 25-26 are unclear, "that penetrate the exposing light"; page 2, the first paragraph does not make sense, "the compensation has been tried...by measuring the flare", and line 1, "flare is previously measured". Page 3, lines 21-23, are unclear; should it read, "...the easier the resist pattern...layout is removed"?

Appropriate correction is required.

The drawings are objected to because Figs. 16-18 refer to prior art, and therefore, must be labeled "Prior Art".

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 1-3 are rejected under 35 U.S.C. 102(b) as being anticipated by Shiraishi et al. (5,966,201).

Shiraishi et al. teach a patterned mask as claimed in claim 1 (see claims 1-11, and Fig. 4-7).

Claim 1-3 are rejected under 35 U.S.C. 102(e) as being anticipated by Adel et al. (6,921,916) or Bowes (6,778,275).

Adel et al. teach (see claims and Fig. 6 and 7) an overlay mark for determining the relative position between two or more successive layers of a substrate or between two or more separately generated patterns on a single layer of a substrate is disclosed. The overlay mark includes a plurality of coarsely segmented lines that are formed by a plurality of finely segmented bars. In some cases, the coarsely segmented lines also include at least one dark field while being separated by a plurality of finely segmented bars and at least one clear field. In other cases, the coarsely segmented lines are positioned into at least two groups. The first group of coarsely segmented lines, which are separated by clear fields, are formed by a plurality of finely segmented bars. The second group of coarsely segmented lines, which are separated by dark fields, are also formed by a plurality of finely segmented bars.

Bowes teach the mask pattern of claims 1-3 (see especially Figs. 2 and 4, and cols. 5-6).

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The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shiraishi et al. (5,966,201) or Adel et al. (6,921,916) in view of Bowes (6,778,275).

The claimed invention is directed to a photomask having a pattern on a substrate and composed of a material transmitting exposing light and light-shielding portions of a material that does not transmit the exposing light, said pattern comprising: a central pattern portion having a plurality of line patterns, leaving a predetermined distance on a central portion of the substrate; and a peripheral pattern portion located proximate a peripheral portion of said substrate, surrounding the central pattern portion.

The applicant discusses the limitations of the prior art in that as the wavelength of the exposing light becomes shorter, the region affected by local flare becomes smaller, but the intensity of local flare is considered to increase. Therefore, it is considered that the effect of the use of shorter wavelength on the line width of the transferred pattern becomes too larger to ignore. It is therefore important to correctly know the effect of local flare.

Shiraishi et al. or Adel et al. are included here as discussed above.

The teachings of Shiraishi et al. or Adel et al. differ from those of the applicant in that the applicant teaches that the number of line patterns is 9 and the length is 10 microns or more. Bowes amply teaches in cols. 5 and 6 how to adjust the line patterns including the line length in order to produce a desired effect.

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Therefore, it would have been obvious to one having ordinary skill in the art to take the teachings of Shiraishi et al. or Adel et al. and combine them with the teachings of Bowes in order to make the claimed invention because adjusting the line width and length of the mask pattern lines would obviously be dependent on the pattern that was to be produced after exposure.

### *Conclusion*

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Stephen Rosasco whose telephone number is (571) 272-1389. The Examiner can normally be reached Monday-Friday, from 8:00 AM to 4:30 PM. The Examiner's supervisor, Mark Huff, can be reached on (571) 272-1385. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

A handwritten signature in black ink, appearing to read 'S. Rosasco', with a stylized flourish at the end.

S. Rosasco  
Primary Examiner  
Art Unit 1756

S. Rosasco  
11/0806